REMARKS

Appreciation is expressed for the indication of allowability of claims 13, 25 and 26. These claims have been rewritten in independent form to include the limitations of claim 1, on which they depended. In addition, claim 13 also includes the limitation that the second wavelength range is longer than the first; claim 25 also includes the limitation of claim 4, and claim 26 also includes the limitation of claim 5. Accordingly, claims 13, 25 and 26 are in condition for allowance.

Dependent claims 4-12, 14-24 and 27-33 have been made dependent on one or more of claims 13, 25 and 26 and are allowable with them.

Independent claim 1 has been amended to recite that "said luminescence conversion element comprising a luminescence conversion layer produced from a silicone and containing inorganic luminescence material selected from the group consisting of garnets doped with rare earths, alkaline earth metal sulfides doped with rare earths, thiogallates doped with rare earths, aluminates doped with rare earths, and orthosilicates doped with rare earths." New independent claim 52 recites "said luminescence conversion element comprising a luminescence conversion encapsulation produced from a silicone and containing inorganic luminescence material selected from the group consisting garnets doped with rare earths, alkaline earth metal sulfides doped with rare earths, thiogallates doped with rare earths, aluminates doped with rare earths, and orthosilicates doped with rare earths." New independent claim 53 recites "said luminescence conversion element being formed such that the radiation of the first wavelength range passes through said luminescence conversion element along a plurality of paths, the plurality of paths having a substantially equal path length inside said luminescence conversion element, and said luminescence conversion element emitting a substantial portion of the radiation of the first wavelength range and the radiation of the second wavelength range, wherein said luminescence conversion element is directly deposited on said semiconductor body; and wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum at a wavelength of or below 520 nm." New dependent claims 54-87 depend on various independent claims.

Claim 1 stands rejected as obvious over Stevenson with Tadatsu '609 and Abe'230; as obvious over Stevenson with Tadatsu and Abe and further in view of Tokailin '214; and as obvious over Stevenson with Tadatsu and Abe, Tokailin and further in view of Mita '881, Chao, Robbins and Sato 796

Stevenson shows a GaN semiconductor and mentions using phospors to change the frequency of light, but does not describe how the phosphors would be employed and does not disclose a luminescence conversion layer or encapsulation of silicone as required by claims 1 and 52, respectively.

Tadatsu JP 5152609 has a gallium nitride semiconductor (with emitting peaks at 430 nm and 370 nm) and a dome-shaped molded resin encapsulation with a fluorescent dye 5 or pigment dispersed in the resin. Tadatsu thus does not disclose a luminescence conversion layer or encapsulation of silicone as required by claims 1 and 72, respectively.

The remaining references do not make up the deficiencies of these references just noted.

Abe U.S. Patent No. 5,535,230 describes a device with a semiconductor laser crystal and fluorescent material. The fluorescent material 4 is coated on the inside of a vacuum tube containing argon gas or the like.

Tokailin U.S. Patent No. 5, 126,214 describes an electroluminescent element with an organic EL material emitting near UV and a fluorescent material that absorbs UV and emits in the visible range from blue to red. Col. 17, lines 34-37 states that "the fluorescent material part must exist outside of both electrodes in the organic EL element part." Common organic EL elements have the structure of thin films comprising electrodes covering the entire main surfaces of the film. Consequently, there is no electroluminescent component deposited on a light creating semiconductor device as required by claims 1 and 52.

Mita U.S. Patent No. 3,932,881 describes a device with an IR semiconductor source and a yttrium fluoride luminescent material dispersed in epoxy resin in cavity 33. The patent describes converting the emitted IR to the fullest extent possible. (Col. 3, lines 42-44). This is the opposite of the invention of claim 1, which, as a fundamental part, requires that some of the original light be converted and some not be converted in order to output mixed white light.

Robbins describes photoluminescence of Ce doped YAG and describes use in CRTs and high pressure mercury lamps.

Chao describes luminescence of glasses doped with various materials. Sato describes a full color fluorescent display device using a variety of fluors. The details of the structure are not described.

Claim 53 also distinguishes the prior art.

Accordingly, all claims are submitted to be allowable under 35 USC 103(a).